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DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

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STATE OF MONTANA

HELENA, MONTANA 59620

June 12, 1987

Governor's Office, Helena, MT 59620
Stillwater County Health Department, Courthouse, Box 111, Columbus, MT 59019
Stillwater County Planning Office, Box 851, Columbus, MT 59019
Stillwater County Commissioners, P. O. Box 147, Columbus, MT 59019
Stillwater County Sherriff, P. O. Box 147, Columbus, MT 59019
Montana Bureau of Mines & Geology, C/O Montana Tech, W. Park St., Butte, MT 59701
Soil Conservation Service, Federal Building, Bozeman, MT 59715
HUD Regional/Area Office, O.I.L.S.R., ATTN: Carroll Goodwin, Executive Tower Building, 1405 Curtis Street, Denver, CO 80202
HUD Regional/Area Office, O.I.L.S.R., ATTN: Pat Donohue, Executive Tower Building, 1405 Curtis Street, Denver, CO 80202
Montana State Library, Helena, MT 59620
Environmental Quality Council, Helena, MT 59620
Department of Commerce, Helena, MT 59620
Department of Fish, Wildlife and Parks, Helena, MT 59620
Department of Highways, Helena, MT 59620
Department of Natural Resources and Conservation, Helena, MT 59620
Fire Marshal Bureau, Department of Justice, 1409 Helena Ave., Helena, MT 59620
Information Unit, Department of Health and Environmental Sciences, Helena, MT 59620
Environmental Information Center, P. O. Box 1184, Helena, MT 59624
Montana Historical Society, 225 N. Roberts, Helena, MT 59601
Brown Engineering, P. O. Box 508, Nye MT 59061
Stillwater Mining Company, Star Route 2, Box 365, Nye MT 59061

RE: Circle T Subdivision
Stillwater County

Ladies and Gentlemen:

The enclosed Preliminary Environmental Review (PER) has been prepared for Circle T Subdivision in Stillwater County, and is submitted for your consideration. Questions and comments will be accepted until June 27, 1987. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

Steven L. Pilcher

Steven L. Pilcher, Chief
Water Quality Bureau
Environmental Sciences Division

SLP/gln
Enclosures

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DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Cogswell Building, Helena, Montana 59620
(406) 444-2406

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences Division/Water Quality Bureau

Project or Application Circle T Subdivision

Description of Project The proposed project is 1/4 mile west of the Town of Absarokee. Out of the 340 acres owned by the Stillwater Mining Company, approximately 213 acres will be developed as 2 to 5 acre residential tracts. A total of 59 single-family lots is proposed to be platted in two phases. Water will be provided by the Absarokee Water Users Association via extension of the public water supply. Sewage treatment will consist of individual septic tank/soil absorption systems.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats			x			*
2. Water quality, quantity and distribution			X			*
3. Geology & soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality			X			*
5. Aesthetics			X			*
6. Air quality			X			*
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy			X			*
9. Historical and archaeological sites				X		

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores				X		
2. Cultural uniqueness and diversity				X		
3. Local and state tax base & tax revenue		X				*
4. Agricultural or industrial production			X			*
5. Human health				X		
6. Quantity and distribution of community and personal income			X			*
7. Access to and quality of recreational and wilderness activities				X		*
8. Quantity and distribution of employment			X			*
9. Distribution and density of population and housing			X			*
10. Demands for government services		X				*
11. Industrial & commercial activity			X			
12. Demands for energy			X			
13. Locally adopted environmental plans & goals				X		*
14. Transportation networks & traffic flows			X			*

Other groups or agencies contacted or which may have overlapping jurisdiction Stillwater County Commissioners; Stillwater County Planning Board; Stillwater County Health Dept.; Absarokee Water Users Association

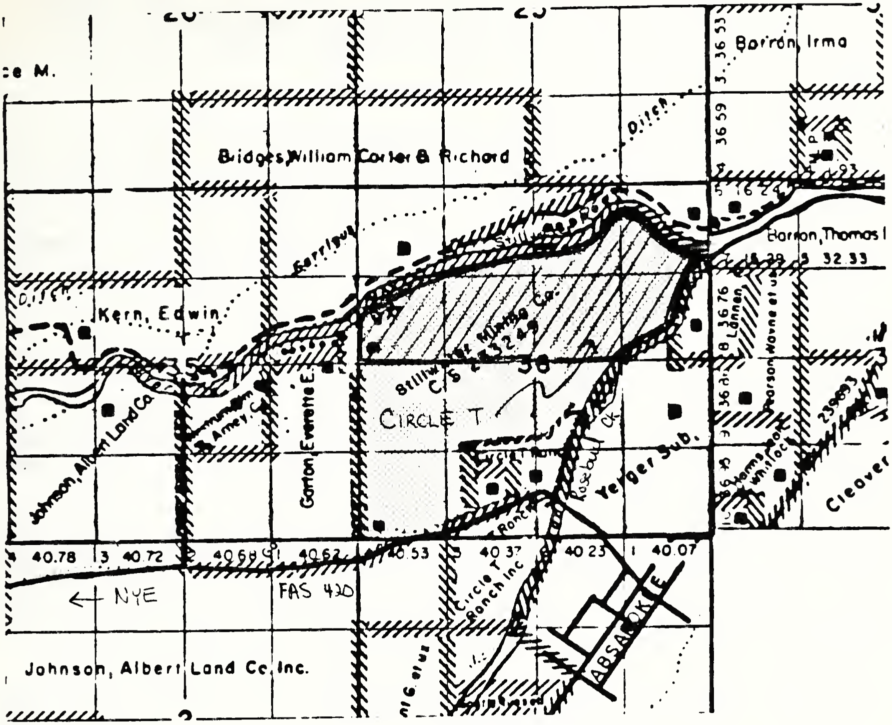
Individuals or groups contributing to this PER. Brown Engineering; Stillwater County Superintendent of Schools

Recommendation concerning preparation of EIS I recommend that an EIS not be prepared.

PER Prepared by: James C. McCauley, P.E.

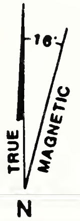
Date: June 10, 1987

DHES/ESD-2



▒ Owned by SMC /
NE1/4 & SE1/4 Sec 35 //
SW1/4, SE1/4, NW1/4 & NE1/4 Sec 36

from Stillwater County plat maps



NOTE : See plat sheet 4 &appendix IX for further details on adjacent land owners

Brown engineering
Box 466, Nye, Montana 59061 Phone: (406) 328-6114

scale 1:1980
date 9 JAN 1987
drn kee
ckd
project "CIRCLE T" SUBDIVISION
title CIRCLE T LOCATION & LEGAL DESCRIPTION
Figure 1

POTENTIAL IMPACT ON THE PHYSICAL ENVIRONMENT

1. Terrestrial and Aquatic Life and Habitats

The only major wildlife habitat directly affected by this development is irrigated pasture. The riparian woodland habitat along the Stillwater River and Rosebud Creek will be preserved. This area provides food and cover for several small species of mammals and birds. Whitetail and mule deer along with other smaller animals such as skunks, rabbits and deer mice inhabit this area. The two significant streams which converge at the northeast boundary of the subdivision contain various species of fish and are popular trout fisheries.

Approximately 213 acres of the 340 acre plot owned by the Stillwater Mining Company will be developed for residences. Twenty two acres of the subdivision plat will be dedicated as parkland. The park area in the northeast corner of the subdivision contains a small manmade pond which will be retained. Migratory waterfowl, including coots and mallards, have been spotted in the pond area.

If domestic animals are permitted to run at large the existing wildlife will be affected. Although the covenants for Circle T provide that domestic animals must be confined to the premises unless accompanied by the owner, these covenants would have to be enforced to prevent harassment of deer and similar species.

The impact to fisheries may be minor due to the use of the adjacent streams by residents. However, it may be assumed that residents of Circle T would live and work in the area and utilize the Stillwater River and Rosebud Creek regardless of their actual place of residency.

2. Water Quality, Quantity and Distribution

The fifty-nine lots of Circle T Subdivision will utilize individual subsurface absorption sewage treatment systems. With lot sizes ranging from 2 to 5 acres, the soil should provide adequate renovation of the septic tank effluent. Although the subdivision is within 500 feet of the property boundary of the Absarokee sewage treatment lagoon, the piping distances of 1540 feet to 2640 feet depending upon the availability of easements and crossing of Rosebud Creek make connection to the public sewer unfeasible from an economic standpoint.

The soil survey of Stillwater County as prepared by the USDA Soil Conservation Service, 1980 describes the soils thought to be present in the subdivision. The subdivision is mainly comprised of the Lolo complex consisting of 35% very gravelly loam, 30%

cobbly loam and soils with a stoney surface layer or loose sand and gravel at a depth of 20 to 40 inches or soils that do not contain as much gravel. Lohler clay loam is the other significant soil type found in the area to be developed. Lolo/Nesda soils, flooded is shown to be present along the banks of the streams, but outside of the area to be developed for homesites and sewage disposal. A total of 14 test pits were excavated onsite to a depth of 8 to 9 feet. Specifically, it was found that the Lohler soil type had more sand and gravel mixed with the clay loam at a depth of 24 inches or more. The Lolo complex was found to cover a slightly larger area than mapped by SCS and in general contained a higher percentage of fine textured material. Percolation tests were performed on each lot in the area of the proposed sewage treatment drainfield. These rates varied between a low of 6 minutes per inch to a high of 33 minutes per inch. Most percolation rates were in the 10 to 20 minute per inch range which is ideal for subsurface sewage disposal.

Groundwater levels within the proposed subdivision have been monitored in these test holes since late August of 1986. With the possible exception of one or two homesites, groundwater is influenced by flood irrigation practices. In September of 1986 a high water table less than six feet from the ground surface was observed by staff from this office. At that time the area was under extensive flood irrigation. However, flood irrigation practices have ceased on the proposed site and the irrigation ditches and laterals have been obliterated. Groundwater levels observed since the termination of flood irrigation have all been within the acceptable range for onsite sewage disposal systems. Groundwater monitoring will continue on all lots determined to be marginal through this summer until one full year of data is available. It is anticipated that construction will be phased in two segments with the lots which have not displayed any shallow groundwater levels to be developed first.

There are three areas that exhibit constraints for subsurface sewage disposal. The first is an old river oxbow with boggy organic soil. Sewage system sites near this feature will be monitored extensively and set back an adequate distance from steep slopes or unsuitable soils. The second feature is an intermittant drainage area which carried excess flood irrigation waters toward the Stillwater River. Sewage systems near this drainage will be set back an adequate distance to prevent the lateral movement of sewage into the drainage area. The third prominent geologic feature that will be avoided is the wet floodplain area along both major streams. Sewage treatment systems will be set back a minimum of 100 feet from the delineated 100 year floodplain to provide a conservative margin of safety.

The impact of sewage nutrients upon the groundwater aquifer and adjacent streams has been thoroughly evaluated. In a report compiled by Brown Engineering, the migration potential of nitrate from subsurface sewage absorption systems was evaluated for six different worst case scenarios. This model was based upon three onsite test wells and measured values for transmissivity and aquifer gradient. A nitrate concentration of 6.64 mg/l is anticipated at the river bank for lot 6 which is below the drinking water standard of 10mg/l. This represents the highest anticipated nitrate level based upon conservative parameters.

Although the proposed parcels are of sufficient size and test pumping of onsite wells substantiates an adequate aquifer, individual wells are not proposed for Circle T Subdivision. The option of connection to the Absarokee Water Users Association has been chosen as the preferred method of water supply. A complete water distribution system will be constructed to supply both domestic needs and meet standard fire flow requirements. The Absarokee water system has adequate capacity to supply the proposed subdivision. The Absarokee Water Users Association is favorable to the provision of water service.

3. Geology and Soil Quality, Stability and Moisture

The overall geology of the proposed Circle T site can be characterized as alluvial deposits of valley fill consisting mainly of silt, sand, and gravel. The site is at the confluence of two major streams fed by runoff from the Beartooth Mountains to the south.

A general description of soils has been provided in the above section. The limitations of these soils for house foundations and roadways was evaluated by the project engineer, Keith Brown. Limitations may consist of high shrink-swell, low soil strength, flooding, and frost action. Roads will be constructed with proper grubbing of the organic material and placement of suitable compacted fill with a gravel base. All roadways will be located in areas not subject to flooding.

All homesites have been specified with a minimum setback from the floodplain and/or unstable river banks of 50 to 150 feet. Soil limitations for foundations may be overcome by proper sizing of footers and reinforcing with steel. As noted above, the clay content of soils encountered in excavated pits do not indicate limitations as severe as those described by the SCS survey.

4. Vegetation Cover, Quantity and Quality

The area to be developed for residential homesites can be characterized as cultivated hayland and irrigated pasture. It is comprised of wheatgrass, brome grasses, orchard grass, timothy and others. The Riparian woodland habitat along the streams will remain undisturbed by development. The majority of the cultivated hayland to the south of the homesites will remain under cultivation. Very few if any trees will be removed for road construction or home construction.

It is assumed that lot owners will establish grassed lawns which will provide adequate soil protection and prevent soil erosion or increased stormwater runoff. The development of roadways with gravel surfaces and the impervious areas occupied by homes, sheds, patios and driveways will result in increased runoff quantities. However, the impact of stormwater runoff will be minimal since it will be channeled via culverts to existing grassed swales and natural retention areas.

5. Aesthetics

Aesthetics is a highly subjective issue and there is very little agreement as to whether any housing project detracts or enhances the beauty of a property. The visual impact of this development will be minimal due to its setback from the paved highway FAS 420 to the south and its proximity to the town of Absarokee. It may be considered offensive to residents on the bank of the Stillwater River across from the subdivision, but the buffer of woodland and park area will mitigate this site factor.

6. Air Quality

Air quality could deteriorate with an increase in wood burning stoves but the relatively large lot size will minimize this impact. The gravel roads could result in significant dust pollution but this can be mitigated by application of a polymer surface treatment.

8. Demands on Environmental Resources of Land, Water, Air and Energy

The development of any subdivision will of course place demands upon water resources and land. The larger lot sizes proposed will require greater land area than an urban high density development but at the same time it is favorable to the treatment and renovation of sewage generated by the residents.

The location of this project would be favored by most land planners over a similar development situated several miles from town. Homeowners will consume gasoline commuting to the principal employment site, the Stillwater Mine, and to larger shopping centers in Billings. However, the proximity to Absarokee will minimize the amount of travel necessary for more rural developments.

3. Local and State Tax Base and Revenue

The conversion of agricultural land to residential tracts will significantly alter the tax revenue generated from this site. Taxes for the year 1986 amounted to $777.84 for the entire 340 acre tract and improvements. The anticipated tax revenue upon total buildout would be $41,027.84 per year.

4. Agricultural or Industrial Production

The Circle T site is currently leased as irrigated hayland and irrigated pasture. The majority of the prime farmland consisting of the irrigated hayland will be retained with only 32 acres being lost to development. Thus the bulk of this development will remove irrigated pasture from production.

This loss of agricultural land must be accessed with respect to the location of the development in relation to the town of Absarokee and the provision of essential services.

6. Quantity and Distribution of Community and Personal Income

Community and personal income in the area should increase as a result of this development. Since the Stillwater Mining Company is a new employer in the area, an additional source of income for retail trade and local business will occur. The concentration of a significant number of new households will stimulate local service related industry and provide additional tax dollars for local government.

7. Access To and Quality of Recreational and Wilderness Activities

The development of this area will not effect existing access to public owned recreational facilities. The proposed park area within the subdivision will be owned and maintained by the "Circle T Homeowner's Association". Any additional improvements beyond access and parking space will be the responsibility of this association.

8. Quantity and Distribution of Employment

This development is a result of the need for affordable housing for the employees of the Stillwater Mining Company. By providing housing in a vicinity within reasonable distance of the mine, it may also stimulate the local employment of individuals in the role of support services.

9. Distribution and Density of Population and Housing

The area of the proposed development lies directly west of the town of Absarokee. Other than the natural barrier, Rosebud Creek, which separates it from the town, it is a natural extension of Absarokee. The area to the north across the Stillwater River is already divided into small recreational lots. The area to the south and west will remain in agricultural production. The two to five acre lots proposed are compatible with residential development on the fringe of a town where onsite sewer systems are a viable alternative.

10. Demands For Government Services

The impact of this development upon local government services has already been addressed in the "Hard Rock Mining Economic Impact Statement" prepared for the Stillwater Mining Project in 1985. One of the essential needs of a new residential subdivision is that of public school facilities. This need may occur quickly with Circle T since the buildout will be faster than most developments. The need for staff and facilities due to increased enrollment will be offset by tax prepayment and either direct financing or educational impact bonds for the construction of additional classrooms. The concerns expressed by the Stillwater County Superintendent of Schools Office are as follows:

> " My first concern has to do with the suggested approaches to the proposed subdivision. The preliminary plat map you sent is incomplete in that it doesn't show the exact location of intersections with FAS 420. The proposal suggests that one approach will be near the bridge which would have it located on a very hazardous hill/corner combination. For the safety of the students, I would suggest a straight, flat stretch at the length of the bus being used on either side of these approaches.
>
> At present, on this bus route, the district is using a bus with a rated capacity of 36 passengers to carry 29 students. With 48 to 64 more students, the district would have to make arrangements for a larger bus or possibly two buses for this route. The additional loop through the subdivision would also add to the length of the bus route. All of these concerns would incur added expense in the district's transportation budget."

The approach to FAS 420 has been limited to one intersection since this comment was made. The single approach to Circle T Lane provides for adequate site distances and turn lanes will be constructed for FAS 420 to promote safety.

Fire protection services will be provided by the Absarokee Fire District which maintains a station about two miles distant from Circle T. Standard fire hydrants are proposed at distances of approximately 600 feet within the water distribution system.

According to the Environmental Assessment for Circle T, the Stillwater County Sheriff's Department provides law enforcement in the Absarokee area. One deputy was added in the Nye area. The Sheriff's Department has indicated that at present levels adequate manpower and funding exists to serve the proposed subdivision.

The Absarokee Fire Department provides ambulance service to this area. Hospital facilities are available in Columbus, Laurel and Billings.

Two solid waste collection sites will be provided with two six yard containers at each site. These containers will be fenced to exclude them from view. Solid wastes will be transported to the Stillwater County Transport Facility.

13. Locally Adopted Environmental Plans and Goals

The Circle T master plan has received preliminary plat approval by the Stillwater County Planning Board and the Stillwater County Commissioners.

14. Transportation Networks and Traffic Flows

Private access roads to the subdivision will be constructed to Stillwater County standards and financed by the Stillwater Mining Company. The Circle T Homeowner's Association will assume the responsibility for maintenance and snow removal from these roads.

As previously stated, only a single access to FAS 420 will be provided. A desired access adjacent to the bridge crossing the Rosebud River has been delayed indefinitely until the bridge and its approaches are upgraded. FAS 420 will be widened to create turn lanes from both directions at the main intersection with the subdivision access road Circle T Lane. The redesign and construction standards for this intersection must meet all applicable state and local requirements.